

## Immunochemical determination of sulfamethazine in river water and medicinal preparations

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### Abstract

A new variant of the immunochemical assay for determining sulfamethazine, an antimicrobial drug belonging to the class of sulfonamide derivatives, has been developed based on the fluorescence polarization technique. The immunoassay is carried out using a polyclonal antiserum against several sulfonamides (conjugated with bovine serum albumin) and a fluorescent label (tracer). The proposed fluorescence polarization immunoassay ensures sulfamethazine detection with a threshold of 6 ng/ml and has a dynamic range of linearity for drug concentrations from 0.05 to 25.7 µg/ml. The proposed method has been applied to the determination of sulfamethazine in river water and tablets. Various methods of tablet pretreatment using methanol, acetonitrile, potassium hydroxide solution, and hydrochloric acid have been tried and compared. The accuracy of the immunoassay was confirmed by the recovery test. The possibility of using the obtained antiserum and the proposed immunoassay scheme for the determination of some other sulfonamides is demonstrated. © 2005 Springer Science+Business Media, Inc.

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